



## FINDING OF INQUEST

*An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 28<sup>th</sup> and 29<sup>th</sup> days of April, the 2<sup>nd</sup>, 4<sup>th</sup> and 9<sup>th</sup> days of May and the 13<sup>th</sup> day of July 2022, by the Coroner's Court of the said State, constituted of Naomi Mary Kereru, Coroner, into the death of Jeremy Dane Wotton.*

*The said Court finds that Jeremy Dane Wotton aged 57 years, late of 10 Goodes Road, Ridgehaven, South Australia died at the Royal Adelaide Hospital, Port Road, Adelaide, South Australia on the 9<sup>th</sup> day of June 2018 as a result of brainstem and cerebellar infarction due to vertebrobasilar artery thrombosis. The said Court finds that the circumstances of his death were as follows:*

### **1. Introduction and cause of death**

- 1.1. Mr Jeremy Dane Wotton was a 57-year-old man who, prior to his death at the Royal Adelaide Hospital (RAH) on 9 June 2018, had resided with his wife at their home in Ridgehaven.
- 1.2. Following Mr Wotton's death, a post-mortem examination was conducted by Dr Stephen Wills, a forensic pathologist at Forensic Science South Australia. As part of the post-mortem process, Mr Wotton's brain was retained and examined by specialist neuropathologist, Professor Peter Blumbergs, who prepared a macroscopic<sup>1</sup> and microscopic brain report.<sup>2</sup>

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<sup>1</sup> Exhibit C2a

<sup>2</sup> Exhibit C2b

1.3. Professor Blumbergs' findings were incorporated into the post-mortem report of Dr Wills who cites the cause of death as:

- '1a brainstem and cerebellar infarction.
- b vertebrobasilar artery thrombosis.'<sup>3</sup>

The cause of death is to be read as brainstem and cerebellar infarction due to vertebrobasilar artery thrombosis. I find that to be the cause of Mr Wotton's death.

## 2. **Events leading to Mr Wotton's death**

2.1. It is convenient here to describe in general terms the sequence of events leading up to Mr Wotton's death in order to provide the factual matrix against which the issues in this Inquest can be discussed. I will deal with the salient features in greater detail later in these findings.

2.2. Mr Wotton had a medical history of type II diabetes, hypertension, and congestive cardiac failure. He had presented to the Modbury Hospital in the early hours of 4 June 2018 on the advice of a locum doctor, Dr Muhammad Nasir, who had been called to his home in the hours beforehand through his general practitioner's after hours service.<sup>4</sup>

2.3. In his affidavit tendered to the Court, Dr Nasir stated that he was concerned Mr Wotton was suffering from a heart attack due to his high blood pressure and complaints of neck pain.<sup>5</sup> Dr Nasir also stated that Mr Wotton had described a '*head spin*' with associated difficulty in walking, and suspected vertigo.<sup>6</sup> Dr Nasir contacted the South Australian Ambulance Service (SAAS) on 000 at 2:30am.<sup>7</sup> A strong inference can be drawn from Dr Nasir's consultation note that he had immediate concerns for Mr Wotton, due to his plan of referring Mr Wotton to the '*ED stat*'.<sup>8</sup> Dr Nasir explained that '*stat*'<sup>9</sup> was his abbreviation for Mr Wotton '*needing to go to hospital now*'.<sup>10</sup>

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<sup>3</sup> Exhibit C1a

<sup>4</sup> The Family Home Doctors After Hours GP Service

<sup>5</sup> Exhibit C6, paragraph 5, page 3

<sup>6</sup> Exhibit C6

<sup>7</sup> Exhibit C4

<sup>8</sup> Exhibit C6, paragraph 7

<sup>9</sup> '*Stat*' is an abbreviation of the Latin word '*statim*' meaning '*immediately, without delay*'

<sup>10</sup> Exhibit C6, paragraph 7

- 2.4. The Ambulance Patient Report Form (APRF) reflected that the ambulance arrived at Mr Wotton's house at 2:44am and departed at 3:21 am, arriving at the Modbury Hospital at 3:32am on 4 June 2018.<sup>11</sup>
- 2.5. Upon Mr Wotton's arrival at the Modbury Hospital Emergency Department (ED), he was triaged and then assessed by Dr Lily Du, who was a general Registered Medical Officer at the Northern Adelaide Local Health Network (NALHN). She was in her third year of medical practice after her intern year.<sup>12</sup> Dr Du assessed Mr Wotton to determine whether his complaints of dizziness and blurry vision (vertigo) arose from a central or peripheral origin. Put simply, a central cause of vertigo is from within the brain and peripheral cause is within the ear connections.<sup>13</sup>
- 2.6. I pause here to explain that central vertigo can be caused by cerebellar infarction or haemorrhage (stroke), lateral medullary infarction (Wallenberg's syndrome - an acute ischaemic infarct), multiple sclerosis and vertebrobasilar insufficiency. This is in contrast to peripheral causes of vertigo which include vestibular neuronitis, labyrinthitis and Meniere's syndrome (disorders of the inner ear). It follows therefore that a central cause of vertigo is the more serious of the two with potentially life-threatening implications.
- 2.7. For reasons that I will canvass in detail below, Dr Du was reassured that Mr Wotton's symptoms of vertigo were from a peripheral cause. She discharged Mr Wotton at 6:56am on 4 June 2018.<sup>14</sup>
- 2.8. Mr Wotton returned to his home upon discharge and went to bed at approximately 9am on 4 June 2018. When Mr Wotton awoke at approximately 11am, he was suffering from left-sided facial droop and slurred speech.<sup>15</sup> SAAS were contacted for a second time and upon conveyance to the Lyell McEwin Health Service (LMHS) a Code Stroke was activated by SAAS.<sup>16</sup>
- 2.9. Shortly after arrival at the LMHS, Mr Wotton underwent a number of scans including a CT head, CT angiogram and CT perfusion.<sup>17</sup> Interventional Radiologist, Dr Michael

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<sup>11</sup> Exhibit C4

<sup>12</sup> Exhibit C11, page 1, paragraph 5

<sup>13</sup> Transcript, page 183

<sup>14</sup> Exhibit C11a

<sup>15</sup> Exhibit C8, page 18 - as reported to SAAS officers when they attended

<sup>16</sup> Exhibit C8, page 18

<sup>17</sup> Exhibit C8, page 27 - All three investigations are reported in the same radiology report

Wilks concluded in his report that ‘...while the verteobasilar system is hypoplastic, the imaging is suspicious for an acute basilar thrombosis’.<sup>18</sup>

- 2.10. Mr Wotton was transferred to the RAH on the same day for urgent thrombectomy performed by Interventional Neuroradiologist, Dr Jamie Taylor.<sup>19</sup> This procedure was performed with a reportedly ‘good result’<sup>20</sup> with a complete opening of artery<sup>21</sup> and the aspiration of two large thrombus.<sup>22</sup> Unfortunately, Mr Wotton complained of stroke symptoms shortly after the procedure.<sup>23</sup>
- 2.11. Mr Wotton was transferred back to the LMHS on 5 June 2018 in a stable condition. On 6 June 2018, Mr Wotton suffered an acute deterioration.<sup>24</sup> An MRI was performed revealing features of an acute cerebral infarction involving the medulla.<sup>25</sup>
- 2.12. As a result of this finding, Mr Wotton was transferred back to the RAH for a second thrombectomy, performed by Interventional Neuroradiologist, Dr Rebecca Scroop.<sup>26</sup> Unfortunately, only a small amount of thrombus was able to be extracted. A decision was made to stent the basilar artery.<sup>27</sup>
- 2.13. Mr Wotton continued to deteriorate and died on 9 June 2018 at 10:50am.
- 2.14. Professor Anderson, the expert neurologist (as detailed below in paragraph 3) opined that at the time Mr Wotton presented to the ED of Modbury Hospital on 4 June 2018, a posterior circulation stroke had been evolving, with the ‘stuttering’<sup>28</sup> onset of symptoms likely to have commenced at approximately 5pm on 3 June 2018.<sup>29</sup> I accept Professor Anderson’s opinion.
- 2.15. The focus of the Inquest was primarily on the care Mr Wotton received at the Modbury Hospital in the early hours of 4 June 2018, as well as the appropriateness and timing of his discharge from this hospital. These questions were considered in the context of the diagnosis of a posterior circulation stroke, which the Inquest heard does not typically

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<sup>18</sup> Exhibit C8, Page 27

<sup>19</sup> Exhibit C9, Page 52

<sup>20</sup> Exhibit C9, Page 52

<sup>21</sup> Transcript, page 268, Professor Anderson’s evidence

<sup>22</sup> Exhibit C9, page 57

<sup>23</sup> Exhibit C9, page 57

<sup>24</sup> Exhibit C8, page 65

<sup>25</sup> Exhibit C10, page 6 - radiology report

<sup>26</sup> Exhibit C9, page 66

<sup>27</sup> Exhibit C9, page 66

<sup>28</sup> Transcript, page 162, 193 - Professor Anderson described the onset of Mr Wotton’s symptoms as a stuttering onset (see also footnote 29 for references)

<sup>29</sup> Transcript, page 199, 259, 260, 261

present with the classic stroke symptoms that are seen in anterior circulation stroke. The Inquest heard that Mr Wotton's stroke occurred in the vertebrobasilar artery territory of his brain (involving the posterior circulation), thereby making his initial presentation symptoms atypical.

- 2.16. An associated question naturally for the Court's consideration was whether a more timely diagnosis and intervention may have altered the outcome. In order to consider whether Mr Wotton's death was preventable, evidence was heard about Mr Wotton's deterioration at the RAH after the thrombectomy procedure by Dr Taylor, notwithstanding the re-opening of the artery.
- 2.17. Ultimately, I examined the question as to whether Mr Wotton's death could have been prevented if Dr Du had admitted Mr Wotton to hospital for observation or arranged imagery when he presented to the Modbury Hospital on 4 June 2018, thereby diagnosing a stroke and intervening at an earlier time.

### **3. Professor Craig Anderson**

- 3.1. Mr Wotton's clinical management was examined by Professor Anderson, an expert neurologist in the field of general, vascular and geriatric neurology with a PhD in epidemiology.<sup>30</sup> Professor Anderson provided a report dated 12 December 2020. He listened via WebEx to a portion of the evidence of Dr Lily Du as well as giving oral evidence by WebEx.
- 3.2. I regarded Professor Anderson as an expert in his field of neurology.
- 3.3. To assist the Court in its understanding of the difference in acute stroke presentations, Professor Anderson gave detailed evidence about the distinction between the anterior and posterior circulation within the brain. He gave the following evidence:

'...the anterior [circulation] is from the carotids and they supply the major, effectively the carotids involve the hemispheres, the major bulk of the brain, where we think and speak and move and basically ... probably 80% of the anatomy of the brain and that gives us our life, it gives us our vitality, our thinking, our creativity and speech and movement. The posterior circulation which is the vertebrae, they sort of control that back part of the brain ... it's bit like a battery power pack, it integrates the pathways from the hemisphere down the spinal cord to give us movement and feedback, like a train system, to feedback sensation from our legs and also controls movement around our face, so to be able to

<sup>30</sup> Professor Anderson's current appointments are as Executive Director of the George Institute for Global Health, Professor of Neurology and Epidemiology, Faculty of Medicine at the University of New South Wales, neurologist and former Head of the Neurology Department at Royal Prince Alfred Hospital in Sydney Local Health District (NHMRC) of Australia (Exhibit C16)

swallow and to be able to move our mouth and speak and also control the eye movements, so a sort of sophisticated battery power pack.'<sup>31</sup>

- 3.4. Professor Anderson also gave evidence about the symptomatology of a stroke in these respective areas. He stated that an anterior circulation stroke will result in what are commonly referred to as the '*classic*' symptoms of a stroke; disturbances of your face, arms and speech<sup>32</sup> as the blood flow is restricted over a large area of the brain.<sup>33</sup> Professor Anderson explained that a posterior circulation stroke involves the more intricate wiring of the brain, with pathways that go through the brain stem.<sup>34</sup> Accordingly, more common symptoms for a posterior circulation stroke are sudden disturbances of balance (vertigo), coordination, movement of eyes expressed often as double vision or blurriness of vision, as well as slurry speech.<sup>35</sup> Professor Anderson described these symptoms as atypical symptoms of an acute stroke.<sup>36</sup>
- 3.5. As one of Mr Wotton's presenting symptoms was vertigo, it was important to understand how the neurological pathways related to this particular symptom. Professor Anderson explained:

'All the symptoms of vertigo are related to the organ system or the neurological pathways that arise from what are called the semicircular canals in the inner ear. There are three little canals full of water with little fine hairs in the water that detect movement and stimulate the hairs to nerve endings, they go down through the passageway of the inner ear canal and they connect into the brainstem in the posterior circulation into a vestibular nucleus or an area there and they pick up other pathways and then they take that information to the brain. So peripheral is where the little hairs and the nerve endings in the semicircular canals in the ear have a problem, or are the pathways through the inner part of the ear, and when these nerves or the passageway, the tracks connect into the brain, that's called central...**[All it means, essentially is a central cause, it's within the brain and a peripheral cause it's essentially within the ear, the ear connections]**.'<sup>37</sup>

- 3.6. Professor Anderson readily accepted in his oral evidence that a posterior circulation stroke is more challenging to diagnose due to the atypical symptoms.<sup>38</sup> He further accepted that his evidence was given with the benefit of over 30 years of clinical and

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<sup>31</sup> Transcript, page 173

<sup>32</sup> Transcript, page 176

<sup>33</sup> Transcript, page 175

<sup>34</sup> Transcript, page 176

<sup>35</sup> Transcript, page 176

<sup>36</sup> Transcript, page 211

<sup>37</sup> Transcript, page 183, my own emphasis

<sup>38</sup> Transcript, page 219

academic experience in neurology<sup>39</sup> and that his involvement with acute strokes in EDs were typically after the diagnosis of a stroke had been made by an ED clinician.<sup>40</sup>

- 3.7. In the course of preparing this Finding, I have weighed Professor Anderson's extensive experience and expertise in the field of neurology against Dr Du's relatively limited experience in her position as a junior medical officer (as she was in 2018). I have taken this into account when considering Dr Du's examination and assessment of Mr Wotton who was presenting with atypical acute stroke symptoms.

#### **4. Transfer from home by SAAS**

- 4.1. As mentioned earlier, SAAS conveyed Mr Wotton to the Modbury Hospital ED in the early hours of the morning on 4 June 2018. The APRF was received into evidence and reveals a comprehensive picture of Mr Wotton's medical history, medications, and symptoms.<sup>41</sup> This document is of particular significance in terms of the history that Mr Wotton gave paramedics and its use as collateral information in the ED by Dr Du.
- 4.2. Mr Wotton's past medical history was listed as HTN (hypertension), heart failure, diabetes, smoker, gall bladder removal, L) (left) middle toe removal and ETOH (alcohol) use.<sup>42</sup> His medications were listed as metformin,<sup>43</sup> nifedipine,<sup>44</sup> metoprolol<sup>45</sup> and perindopril.<sup>46</sup>
- 4.3. Mr Wotton's presenting complaint was recorded on the APRF as '*hypertension, giddiness, blurred vision*', with the history recorded as:

'57 ♂ LIVES @ HOME INDEPENDANTLY ē WIFE

- TONIGHT C/O HYPERTENSION →
- ONSET GIDDINESS ≈ 1700 hRS. GOT UP TO GO
- TO TOILET AROUND 0000 hRS. "DIDN'T FEEL RIGHT"
- ≠ ABLE TO AMBULATE. ° ChanGE SIGNS / SYMPTOMS → TRIGGER TO
- CALLED LOCUM. → LOCUM CALLED SAAS
- RECENT 2 / 52 VIRAL EAR ISSUE?

WENT AWAY + NOW COME BACK LAST 1/2 /7  
EARS FEELING STICKY / BLOCKED' <sup>47</sup>

<sup>39</sup> Transcript, page 219

<sup>40</sup> Transcript, page 220 – most likely a third line assessment

<sup>41</sup> Exhibit C4

<sup>42</sup> Exhibit C4

<sup>43</sup> A diabetic medication - Transcript, page 78

<sup>44</sup> An anti-hypertensive medication - Transcript, page 78

<sup>45</sup> An anti-hypertensive medication - Transcript, page 78

<sup>46</sup> An anti-hypertensive medication - Transcript, page 78

<sup>47</sup> Exhibit C4

- 4.4. When giving evidence, Professor Anderson was of the opinion that the attending paramedics had turned their minds to the notion that a possible stroke related cause was considered with the following entry noted in the APRF:

'...equal limb strength, plantar/dorsal flexion, equal smile, able to puff cheeks → symmetrical (sic). Poke tongue out.'<sup>48</sup>

- 4.5. Mr Wotton's blood pressure (BP) was also noted to be significantly elevated with a BP reading of <sup>230</sup>/<sub>120</sub> at 2:55am and <sup>220</sup>/<sub>120</sub> at 3:25am.<sup>49</sup> Importantly, Mr Wotton was noted as saying '*BP has been this high at times before → never had issue headache/dizzy/giddy/blurred vision before due to high BP*'.<sup>50</sup>

- 4.6. The Inquest heard that Mr Wotton was conveyed to the Modbury Hospital which is within NALHN.<sup>51</sup> The other hospital in this local health network is LMHS.<sup>52</sup> The Inquest heard that Modbury Hospital has a lower acuity ED than LMHS.<sup>53</sup> I am also aware that LMHS, the RAH and the Flinders Medical Centre are the only hospitals with stroke units.<sup>54</sup> Based on Mr Wotton's stable condition at the time of his conveyance, and the absence of classic stroke symptoms, I accept that the Modbury Hospital ED was not an inappropriate ED for him at that time.

## 5. The triage process

- 5.1. Mr Wotton arrived at the Modbury Hospital ED at 3:32am and was triaged at 3:35am by Registered Nurse Janine Dekker (RN Dekker).<sup>55</sup> Mr Wotton's presenting problem was recorded as '*dizziness, blurry vision, hypertensive (<sup>220</sup>/<sub>120</sub>)*'.<sup>56</sup>

- 5.2. Mr Wotton was then seen promptly by Graduate RN Kathryn Boardman (RN Boardman) at 3:40am who took the following history:

'57 yo ♂ lives at home with wife. Sudden onset dizziness at 1830 neck stiffness (regular neck pain), Giddiness, Pt states that he "doesn't feel right". Locum called SAAS. Hypertensive with SAAS <sup>220</sup>/<sub>120</sub>. ? viral ear infection 2/52. GCS 15, alert and orientated. BP 179/ afebrile. HR 95, RP 18, nil nausea, Ø SOB.'<sup>57</sup>

<sup>48</sup> Exhibit C4, Transcript, page 224

<sup>49</sup> Systolic reading/diastolic reading - Exhibit C4

<sup>50</sup> Exhibit C4

<sup>51</sup> Transcript, page 44, pages 151-153

<sup>52</sup> Exhibit C11, paragraph 5

<sup>53</sup> Transcript, page 44-45

<sup>54</sup> Transcript, page 152

<sup>55</sup> Exhibit C7, page 20

<sup>56</sup> Exhibit C7, page 20

<sup>57</sup> Exhibit C7, page 23

- 5.3. RN Boardman gave oral evidence at the Inquest. RN Boardman's evidence was limited to the notes she made in the Modbury Hospital clinical record.<sup>58</sup> She told the Court that she did not remember Mr Wotton and only learnt of his death approximately three weeks before the Inquest commenced.<sup>59</sup> Given that Mr Wotton was discharged from Modbury Hospital only a few hours after presenting and then re-presented to a different hospital later on 4 June 2018 after deteriorating at home, I accept that RN Boardman had no clear memory of Mr Wotton. Her oral evidence nonetheless assisted me in identifying the notes she made, the investigations undertaken as well and those working with her in the early hours of the morning.
- 5.4. RN Boardman's involvement with Mr Wotton was relatively brief, and included undertaking an electrocardiogram (ECG), taking three sets of observations,<sup>60</sup> and transferring him onto a more comfortable bed in the ED.<sup>61</sup> She also noted in the records that Mr Wotton was anxious and while she has no specific memory of it, she gave evidence that she would make a record of this nature when a patient expressly stated that he or she was anxious.<sup>62</sup> Based on RN Boardman's evidence and her entry in the clinical notes, I am satisfied that Mr Wotton expressed his anxiety to her.
- 5.5. RN Boardman gave evidence that Mr Wotton underwent an ECG as he was complaining of dizziness which could potentially have a cardiac cause. She noted that he also had a cardiac history.<sup>63</sup> RN Boardman told the Court that the ordering of an ECG was within the scope of her role, however the result was always interpreted by a senior medical officer<sup>64</sup> or senior medical practitioner (SMP) as they were known. RN Boardman identified the SMP on this occasion as Dr McLean from the handwriting that appeared on the ECG trace in the clinical record.<sup>65</sup>
- 5.6. An affidavit was obtained from Dr McLean<sup>66</sup> during the course of the Inquest which confirmed that he did interpret the ECG and made handwritten notes of his findings on the trace.<sup>67</sup> Dr McLean stated in his affidavit that Mr Wotton's ECG was not normal, however the findings were non-specific and in the absence of the complaint of chest

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<sup>58</sup> Exhibit C7

<sup>59</sup> Transcript, pages 16-17

<sup>60</sup> At 3:45am, 4:15am and 5:05am

<sup>61</sup> Transcript, pages 20-23

<sup>62</sup> Transcript, page 19

<sup>63</sup> Transcript, page 20

<sup>64</sup> Transcript, page 21 and 24

<sup>65</sup> Exhibit C7, page.8; Transcript, page 21

<sup>66</sup> Exhibit C18

<sup>67</sup> Exhibit C18, paragraph 10

pain were not concerning.<sup>68</sup> Dr McLean stated '*[i]n Mr Wotton's case, no treatment or intervention was prompted by the ECG given his clinical presentation*'.<sup>69</sup> I accept Dr McLean's evidence on this topic.

## 6. 4:10am to 6:59am on 4 June 2018

6.1. Between 4:10am and Mr Wotton's discharge at 6:59am, there is very little by way of contemporaneous entries in the Modbury Hospital clinical notes.<sup>70</sup> The electronic HASS<sup>71</sup> system printout provides a chronology of Mr Wotton's time in the ED.<sup>72</sup> The following can be deduced from the records:

- Dr Du first saw Mr Wotton at 4:10am on 4 June 2018.<sup>73</sup>
- At 4:12am, Dr McLean made his handwritten note on the ECG.<sup>74</sup>
- At 4:30am, RN Boardman made an entry in Mr Wotton's RDR<sup>75</sup> chart, '*Pt in cub4, dressed in hospital gown, BP 179/97, BGL 15.1, all other vital signs within normal parameters. ECG done. Addit: Transferred to ward bed*'.<sup>76</sup>
- At 5am, a Continuation of Patient Care Plan was completed by RN Boardman. This form identified Mr Wotton as being independent, orientated, physically able and not a known falls risk. It also recorded that he had dentures, jewellery, and other personal items in his care for which he should take responsibility.<sup>77</sup>
- At 6:56am, Mr Wotton was discharged from the ED.<sup>78</sup>
- At a time unknown, the discharge letter authored by Dr Du was completed. It is recorded as follows:

'Dear SURREY DOWNS MED CEN, Sur,

JEREMY WOTTON presented to the Emergency Department at Modbury Hospital on the 4 JUN 2018 at 03:35. The presenting problem was SAAS - DIZZINESS, BLURRY VISION, HYPERTENSIVE <sup>220</sup>/<sub>120</sub>.

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<sup>68</sup> Exhibit C18, paragraph 14

<sup>69</sup> Exhibit C18, paragraph 14

<sup>70</sup> Exhibit C7

<sup>71</sup> Hospital Administration Software Solution

<sup>72</sup> Exhibit C11a; Exhibit C11 Annexure LD3

<sup>73</sup> Exhibit C11a, paragraph 53

<sup>74</sup> Exhibit C7, page 8

<sup>75</sup> Rapid Detection and Response

<sup>76</sup> Exhibit C7, page 24 - RN Boardman explained in her evidence that Mr Wotton was transferred onto a more comfortable bed but still within the ED

<sup>77</sup> Exhibit C7, page 27

<sup>78</sup> Exhibit C11a, page 1

The diagnosis was CNS - NEUROLOGIC SYMPTOMS - VERTIGO

Many thanks for your ongoing care of Jeremy Wotton, 57 yo man from home, presents with feeling unwell. Pmhx HTN, CCF, diabetes.

Upon further clarification has been having vertigo since around 1800, called a locum who became concerned about his blurry vision and high blood pressure and called SAAS. Blood pressure was 220 on arrival but settled quickly to 170, vision is slightly blurry but seems more to be a problem focusing using both eyes. Does not usually get blurry vision with high or low blood sugar. Has had a recent ear infection and had an episode of vertigo previously too.

o/e looks well haemodynamically stable, BP <sup>170</sup>/<sub>100</sub>, HR 78 97% sats, chest clear, heart sounds dual no murmur, abdomen soft, HINTS exam- negative head impulse and test of skew, head movements exacerbated vertigo, nystagmus present.

peripheral vertigo, likely related to recent ear infection. Given prochlorperazine with good relief, discharged home, has prochlorperazine from GP. Many thanks.'

- 6.2. The discharge letter reveals that Dr Du took a history from Mr Wotton about his medical history, the onset of vertigo symptoms, past history of an ear infection and vertigo, observed his vital signs, listened to his chest, felt his abdomen and undertook the HINTS<sup>79</sup> examination.
- 6.3. The discharge letter is the only record of Dr Du's examination of Mr Wotton.

## 7. **Dr Lily Du**

- 7.1. Dr Lily Du provided a detailed statement<sup>80</sup> to the Court and gave oral evidence. In her statement, Dr Du outlined her level of experience in June 2018 as it related to emergency medicine. She had undertaken two rotations through EDs, 10 weeks in her intern year at the RAH and a further term in her second year at the Queen Elizabeth Hospital.<sup>81</sup>
- 7.2. In June 2018, Dr Du was training as a Resident Medical Officer (RMO) at NALHN, having completed two 6-month rotations as a Code Blue Doctor on the Medical Emergency Team (MET) where she received training in advanced airway management. I understood this training to be the focus of Dr Du's specialty interest, which was in effect three to four day shifts per week. Dr Du explained that as part of her roster, she would undertake three to four night shifts in the ED of Modbury Hospital to address

<sup>79</sup> Head Impulse, Nystagmus, Test of Skew Examination

<sup>80</sup> Exhibit C11

<sup>81</sup> Exhibit C11, paragraph 3

the frequent staff shortages.<sup>82</sup> Dr Du's advanced airway management training was also of benefit in the ED.<sup>83</sup>

- 7.3. Dr Du stated that the training she received for the night shifts in the Modbury Hospital ED was '*on the job*' and she had not received any further training in addition to that outlined above.<sup>84</sup> Dr Du told me that nonetheless she felt comfortable and well equipped to assess and treat patients in the ED. Dr Du stated that while available for on-call discussions, ED consultants were not physically present during the night shifts, with the supervisory role for the junior staff falling to the SMP. The SMPs were usually not emergency physicians, rather qualified specialists in other fields such as general practitioners and overseas trained doctors who were yet to be accredited.<sup>85</sup>
- 7.4. With reference to her roster for the period of 3 and 4 June 2018, Dr Du was able to identify that the two SMPs working in the ED when Mr Wotton presented were Dr Tahir Bushra and Dr Alan McLean.<sup>86</sup> As referred to above, Dr McLean identified his handwriting on Mr Wotton's ECG trace,<sup>87</sup> and was the requesting doctor for bloods taken from Mr Wotton during his time in the ED.<sup>88</sup> I am satisfied that Dr McLean was the SMP involved in aspects of Mr Wotton's care on 4 June 2018.
- 7.5. It is important to acknowledge that Dr Du made a number of concessions about her deficient note taking in Mr Wotton's clinical records.<sup>89</sup> She gave evidence on multiple occasions throughout the Inquest that this was something she was working on. While I accept that Dr Du made these concessions in both a candid and genuine manner, I take this opportunity to emphasise the importance of contemporaneous notes being entered into the clinical records. There can be no substitute for a record of an assessment, examination, and a provisional diagnosis list.

## **8. Dr Du's memory of Mr Wotton**

- 8.1. Dr Du stated that she was unsure of whether she had an independent recollection of her shift on 3 and 4 June 2018.<sup>90</sup> She was equally unsure as to her independent recollection

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<sup>82</sup> Exhibit C11, paragraph 6

<sup>83</sup> Exhibit C11, paragraph 7

<sup>84</sup> Exhibit C11, paragraph 8

<sup>85</sup> Exhibit C11, paragraph 8. Transcript, pages 48-49

<sup>86</sup> Exhibit C11, paragraph 45

<sup>87</sup> Exhibit C7, page 8

<sup>88</sup> Exhibit C10, page 59

<sup>89</sup> Transcript, pages 16, 90, 91, 92, 111, 117, 118, 122, 125, 126, 132, 133, 134, 138, 139

<sup>90</sup> Exhibit C11, paragraph 46

of Mr Wotton.<sup>91</sup> Dr Du told the Court that she had participated in a face-to-face meeting with Dr Vince Rossis in August 2018,<sup>92</sup> which was the first time she had learnt of Mr Wotton's death. I understand that this meeting was on a background of a Mortality Working Group Committee conducting a review in relation to Mr Wotton's death in late June or early July 2018.<sup>93</sup> The meeting with Dr Rossis and Dr Du was held to review Mr Wotton's case<sup>94</sup> and discuss with her a circular that NAHLN had generated based on the learnings from Mr Wotton's case.<sup>95</sup> Dr Du stated that as at 26 April 2022, when giving her statement, she could not differentiate between her present independent recollection and what she remembered from reviewing the clinical records with Dr Rossis.<sup>96</sup>

- 8.2. I am surprised by Dr Du's limited memory of Mr Wotton, particularly after learning of his death less than two months following her decision to discharge him home. This was in addition to reviewing Mr Wotton's case notes with Dr Rossis, and no doubt discussing her treatment of him with the senior doctor. Unfortunately, due to the absence of any contemporaneous notes (with the exception of the Discharge Letter) I am left with Dr Du's evidence about what is her usual practice, rather than her memory. Accordingly, I have treated certain aspects of Dr Du's evidence with caution where it is not supported by the clinical notes.

## **9. Dr Du's assessment and examination**

- 9.1. Dr Du's assessment and treatment of Mr Wotton is outlined in detail in her statement.<sup>97</sup> In summary, Dr Du asked me to accept that she undertook the following:

- Reviewed the triage note;
- Reviewed the ED RDR Chart;
- Reviewed the SAAS Clinical Record with medications listed;
- Reviewed the ECG and blood results;
- Based on the presenting symptoms considered peripheral vertigo or cerebellar/posterior stroke among the differential diagnoses;

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<sup>91</sup> Exhibit C11, paragraph 46

<sup>92</sup> Exhibit C11, paragraph 36

<sup>93</sup> Exhibit C11, paragraph 39

<sup>94</sup> Exhibit C11, paragraph 39

<sup>95</sup> Exhibit C11, LD 1

<sup>96</sup> Exhibit C11, paragraph 46

<sup>97</sup> Exhibit C11, paragraphs 57-135

- Took a history relating to onset of symptoms, description of symptoms, recent medical complaints;
- Undertook the HINTs examination;
- Undertook a routine physical examination (cardiovascular, respiratory and abdominal);
- Undertook a focused neurological examination – concentrating on the third, fourth and sixth cranial nerves;
- Reviewed vital signs;
- Ordered prochlorperazine;
- Returned to reassess Mr Wotton;
- Determined that the prochlorperazine had good effect on the vertigo symptoms;
- Spoke with Mr Wotton;
- Explained vertigo and many potential causes;
- Explained the examination findings;
- Explained the response to prochlorperazine with a view to explaining the likely peripheral cause of vertigo;
- Explained the various characteristics of the assessment including recent viral ear infection, history of episodic vertigo and lack of neurological symptoms;
- Explained his specific risk factors including stroke, diabetes, high blood pressure and a history of smoking and obesity;
- Offered to admit him for observation and investigations including imagery;
- Explained that if CT imagery was inconclusive, an MRI would be necessary;
- Discussed Mr Wotton’s case with an SMP before discharge.<sup>98</sup>

9.2. The descriptions set out in her statement claim a detailed and comprehensive examination. However, the assessment and examination set out in her evidence and statement are based almost solely on her assumptions grounded in her usual practice. The absence of entries in the case notes relating to the examination of Mr Wotton, with the exception of the discharge letter, belie this claim.

9.3. I have no hesitation in accepting that Dr Du considered the SAAS documentation and had regard to RN Boardman’s notes in the RDR chart. I also accept that Dr Du took a history and physical examination of Mr Wotton to the extent that it appears in the discharge letter. I accept that Dr Du undertook the HINTs examination and did so with

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<sup>98</sup> Exhibit C11, paragraphs 125-128

stroke as a differential diagnosis. I accept that Dr Du ordered the anti-emetic drug, prochlorperazine and did so to observe whether Mr Wotton's vertigo would improve. These are all matters recorded in the discharge letter.

- 9.4. For the reasons I have outlined below, I have reservations about Dr Du's evidence in relation to the following focused neurological examinations: the cranial nerve, the motor examination, the sensory examination and the cerebella test.
- 9.5. In assessing this evidence, I have observed the relatively short window between Dr Du's first contact with Mr Wotton (4:10am) to the time of his discharge (6:59am). This time period does not lend itself to the concept of a thorough and thoughtful neurological examination being undertaken as claimed by Dr Du, particularly given the busy nature of the ED and her other duties.
- 9.6. I have also considered Dr Du's relatively junior status as of June 2018. If Dr Du had been an experienced ED physician in 2018 there would be a stronger basis for her to rely on her general practice. However, Dr Du accepted that she had very little experience in June 2018 in the diagnosis of a stroke,<sup>99</sup> and none with atypical symptomatology.<sup>100</sup> Further, she had only undertaken perhaps a dozen focused neurological examinations for patients presenting with vertigo,<sup>101</sup> thereby making her general practice in this area limited.
- 9.7. I accept that Dr Du *'believes'* she did undertake the suite of neurological examinations she refers to. The difficulty I have is that she has no memory of doing so and is solely relying on what she says was her usual practice, which, on her evidence, was limited to approximately twelve occasions over the course of her medical career. When it was put to Dr Du that she did not carry out the detailed/focused neurological examinations, her response was:
- 'My usual practice is to perform that particular collection of neurological examinations on every patient that presents with vertigo.'<sup>102</sup>
- 9.8. On balance, I am unable to be sufficiently satisfied on the evidence to make a positive finding that the focused neurological examination was undertaken on Mr Wotton.

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<sup>99</sup> Transcript, page 100, *'likely more than one'*

<sup>100</sup> Transcript, page 100, *'I don't think so, no'*

<sup>101</sup> Transcript, page 121

<sup>102</sup> Transcript, page 132

## 10. The HINTS examination

- 10.1. The HINTS examination is a test used in conjunction with a patient's history and presentation, to determine whether vertigo is of a peripheral or central cause.<sup>103</sup> As stated above, the implications of a central cause of vertigo are far more serious than a peripheral one.
- 10.2. Dr Du explained that she deployed this examination to assist her in differentiating between a central and peripheral cause for Mr Wotton's vertigo symptoms.<sup>104</sup>

	<b>PERIPHERAL</b>	<b>CENTRAL</b>
<b>HEAD IMPULSE TESTS</b>	Positive	Negative
<b>NYSTAGMUS</b>	Horizontal unidirectional	Horizontal bi-directional, vertical or purely rotatory
<b>TEST OF SKEW</b>	Negative	Positive

- 10.3. Dr Du set out the three components of the HINTS Examination in her statement: the head impulse test, an evaluation of nystagmus (jerky repetitive eye movements<sup>105</sup>) and a test of skew.<sup>106</sup> The implications of the results of each component were also set out in Dr Du's statement.<sup>107</sup>
- 10.4. Dr Du recorded in Mr Wotton's discharge letter that the result from the HINTS exam were '*negative head impulse and test of skew, head movements exacerbated vertigo, nystagmus present*'.<sup>108</sup> In her statement Dr Du stated that she was aware at the time of her examination that a negative head impulse test was suggestive of a central cause.<sup>109</sup> She stated that she found Mr Wotton to have a negative test of skew,<sup>110</sup> suggestive of a peripheral cause and found the presence of nystagmus, but was confident that it was not rotatory, vertical or bi-directional nystagmus,<sup>111</sup> leading her to a peripheral cause of nystagmus. It was Dr Du's ultimate view that the HINTS test yielded an equivocal

<sup>103</sup> Exhibit C11, paragraph 76

<sup>104</sup> Exhibit C11, paragraph 106

<sup>105</sup> Transcript, page 107

<sup>106</sup> Exhibit C11, paragraph 82

<sup>107</sup> Exhibit C11, paragraph 82

<sup>108</sup> Exhibit C7, page 28

<sup>109</sup> Exhibit C11, para 108

<sup>110</sup> Exhibit C11, para 109

<sup>111</sup> Exhibit C11, para 11

result and was therefore not the tool she used to rule out a central cause for Mr Wotton's vertigo.<sup>112</sup>

10.5. Professor Anderson was concerned with Dr Du's interpretation of the HINTS test. He was under the impression that Dr Du misinterpreted the negative result of the head impulse test as a reassuring sign that the vertigo was peripheral.<sup>113</sup> Professor Anderson was also concerned that her interpretation of it was inappropriate.<sup>114</sup> I accept that Dr Du recognised that a negative head impulse test was suggestive of a central cause. However, I think the second point made by Professor Anderson had more force. He said '*...of all the components of the HINTS, the head impulse is what is essentially what it's all about. So the negative head impulse test is actually the red flag or the ultimate underlying important finding*'.<sup>115</sup>

10.6. Dr Du stated in her evidence that while the HINTS Examination is not a difficult test to do, it is a difficult test to interpret.<sup>116</sup> Professor Anderson went a step further in his evidence. He was of the view that if a clinician was to embark upon the HINTS examination, a level of training and skill is required to interpret the results.<sup>117</sup> He said this:

'There is no doubt the HINTS test is a very reliable examination of the patient to separate the cause of vertigo or dizziness or ... a disturbance of balance and vestibular pathways, from peripheral or central ... However, it is sophisticated. It requires a level of training that would probably take 12 months of specialist neurology training. It is not something that is casually done by the emergency physician, one patient per year ... the HINTS definitely works, very proven, but highly sophisticated, needs some training, and even the best neurologists find difficulty with it.'<sup>118</sup>

10.7. While I accept that Dr Du did not apply the equivocal HINTS results to form her ultimate view on the cause of Mr Wotton's vertigo being peripheral, I find that Dr Du did not place enough emphasis on the negative result of the head impulse test, which she knew to be suggestive of a central cause. I do not make this finding in isolation, rather with her assessment as a whole including Mr Wotton's co-morbidities, his visual disturbance, and his reports of '*not feeling right*' (which I deal with below). In respect of the HINTS test in isolation, I am not critical of Dr Du's application of it, taking on

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<sup>112</sup> Exhibit C11, para 111

<sup>113</sup> Transcript, page 204

<sup>114</sup> Transcript, page 204

<sup>115</sup> Transcript, page 204

<sup>116</sup> Transcript, page 134

<sup>117</sup> Transcript, page 242

<sup>118</sup> Transcript, pages 202-203

board the comments of Professor Anderson about the test being highly sophisticated and difficult to deploy, particularly in the ED setting.<sup>119</sup> I do however have some reservations about this test being used in the ED setting by junior doctors, given Professor Anderson's evidence set out in paragraph 10.6.

## 11. Trouble focussing

- 11.1. In her examination of Mr Wotton, Dr Du placed significance on the absence of a complaint of double vision. The SAAS document reflected that Mr Wotton complained of '*blurred vision*'<sup>120</sup> and the triage note recorded '*blurry vision*'<sup>121</sup>. RN Boardman's entry did not make a specific reference to Mr Wotton's vision, focussing rather on giddiness and dizziness.<sup>122</sup>
- 11.2. Dr Du told the Court that blurry vision, double vision and trouble focussing all have distinct medical definitions and interpretations.<sup>123</sup>
- 11.3. Dr Du stated that '*double vision*' would imply a possible cranial nerve issue and raise red flags as to central cause. She stated '*blurry vision*' could occur from high blood pressure, high blood sugars or trauma to the eyes. Dr Du explained that '*trouble focussing*', is not really a medical term and could be a description of what it is like to have vertigo and not being able to see properly, possibly due to the nystagmus.<sup>124</sup>
- 11.4. Dr Du stated in her oral evidence that the description of '*trouble focussing*' was Mr Wotton's terminology. Dr Du did seem to have a memory of this conversation with Mr Wotton. She said:
- 'But I think I remember with this case; Mr Wotton would not commit either way to what exactly it meant. I would have asked him, I would have offered him, "Does it mean this, does it mean that?", and unfortunately, I had a lot of difficulty with this ... So I couldn't work out from him whether this meant blurry vision, double vision, or something entirely else which is why I have included it in [the discharge letter].'<sup>125</sup>
- 11.5. Dr Du accepted in respect of the confusing description from Mr Wotton about his vision that she was less confident or less able to exclude that he had problems with his vision

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<sup>119</sup> Transcript, page 202

<sup>120</sup> Exhibit C4

<sup>121</sup> Exhibit C7, page 20

<sup>122</sup> Exhibit C7, page 23

<sup>123</sup> Exhibit C11 para 99, Transcript, page 113

<sup>124</sup> Transcript, pages 113-114

<sup>125</sup> Transcript, pages 114-115

that were suggestive of a central cause.<sup>126</sup> She made this concession with the benefit of hindsight.<sup>127</sup>

11.6. Professor Anderson made two comments about this aspect of Dr Du's assessment of Mr Wotton. I understood them to be as follows:

- 1) The absence of double vision does not make the likelihood of a posterior circulation stroke less likely. Professor Anderson opined that blurry vision is really the same pathology as double vision, it is just less extreme;<sup>128</sup> and
- 2) Dr Du's binary approach to assessing Mr Wotton's symptom of blurred vision did not assist her diagnostic process.<sup>129</sup>

11.7. Professor Anderson qualified his second criticism. He stated that he had come to the view that Dr Du was a very intelligent and accomplished doctor who was composed and articulate while giving her evidence.<sup>130</sup> He did however perceive her approach to Mr Wotton as binary; putting certain symptoms into certain boxes, and when they did not fit they were dismissed.<sup>131</sup> Professor Anderson explained that the art of communicating with patients when they are unclear requires skill and openness of thinking and a good level of communication.<sup>132</sup> Professor Anderson told me that certain training and experience in other areas of medicine provides this skill and openness of thinking.<sup>133</sup> I understood his comments to relate to ED staff generally who were required to follow protocols in emergency settings.

11.8. Ultimately, if Dr Du had more experience in other areas of medicine, she may have been better equipped to understand the origin of Mr Wotton's visual disturbance. I understood from Dr Du's evidence that she had taken on board the criticism relating to Mr Wotton's '*trouble focussing*'.<sup>134</sup> In relation to the binary approach of ED staff, I ultimately understood Professor Anderson to soften his view on this approach, particularly in situations where ED staff were required to make life and death decisions and thus should follow protocols.<sup>135</sup>

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<sup>126</sup> Transcript, page 115

<sup>127</sup> Transcript, page 115

<sup>128</sup> Transcript, page 190

<sup>129</sup> Transcript, pages 188-190

<sup>130</sup> Transcript, page 188

<sup>131</sup> Transcript, pages 189-190

<sup>132</sup> Transcript, page 190

<sup>133</sup> Transcript, page 189 – 'outpatient, ambulatory, medical clinic'

<sup>134</sup> Transcript, page 115

<sup>135</sup> Transcript, page 190

## 12. Prochlorperazine<sup>136</sup>

- 12.1. Dr Du ordered the administration of 10mg of prochlorperazine to Mr Wotton at 4:51am on 4 June 2018.<sup>137</sup> Dr Du gave evidence that based on her experience in the Modbury Hospital ED, prochlorperazine was used for patients experiencing vertigo where there was insufficient clinical evidence to warrant imagery.<sup>138</sup> Dr Du said that this was the practice of many consultants and SMPs in this department.<sup>139</sup>
- 12.2. Dr Du told me that her understanding of the mechanism of prochlorperazine, for patients with vertigo, was that it would work for peripheral causes of vertigo, but would not have a good effect for central causes such as stroke.<sup>140</sup>
- 12.3. Dr Du gave evidence that she assumed the prochlorperazine had a positive effect as ‘good relief’ was recorded in her discharge letter. Dr Du stated that the effect of the anti-nausea drug was likely to have been influential in her diagnostic process.<sup>141</sup>
- 12.4. Professor Anderson gave evidence that prochlorperazine is given to ‘*make you feel a bit better and to calm the nausea down, and probably works on the interpretation of dizziness in the process*’.<sup>142</sup> He said the administration of the drug has nothing to do with addressing the underlying pathology, it is given to relieve symptoms only.<sup>143</sup> In cross-examination Professor Anderson clarified that a good response to prochlorperazine in *isolated* vertigo was reassuring of a peripheral cause.<sup>144</sup> He placed emphasis on the word *isolated*, as he did not consider Mr Wotton to have presented with isolated vertigo.<sup>145</sup>
- 12.5. As a senior doctor working in the Modbury Hospital ED, Dr McLean was asked to address the usual practice for medical practitioners in the ED to rule out a differential diagnosis of posterior circulation stroke in circumstances where prochlorperazine resolves vertigo symptoms, when preparing his affidavit. He stated the following:<sup>146</sup>

[t]he risk of posterior circulation stroke (and any stroke for that matter) should be addressed using the history, examination (in particular, neurological examination) and in

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<sup>136</sup> Also known as Stemetil

<sup>137</sup> Exhibit C7, page 24

<sup>138</sup> Exhibit C11, paragraph 116

<sup>139</sup> Transcript, page 102

<sup>140</sup> Transcript, page 93

<sup>141</sup> Exhibit C11, paragraph 121

<sup>142</sup> Transcript, page 231

<sup>143</sup> Transcript, page 205

<sup>144</sup> Transcript, page 231 (my own emphasis)

<sup>145</sup> Transcript, page 232 (my own emphasis)

<sup>146</sup> Exhibit C18, paragraph 19

some cases, imaging. Further clues may be afforded by the patient's progress, either deterioration or persistence of symptoms.<sup>147</sup> Regardless of whether or not the patient received prochlorperazine, if their vertigo settles, whilst this does not completely rule out a posterior circulation stroke, it would give a medical practitioner some reason to believe that there was no ongoing posterior circulation ischaemia.<sup>148</sup> This may then affect management decisions, such as whether further investigation should be performed<sup>149</sup>, imaging should be undertaken,<sup>150</sup> the patient is admitted to hospital.'<sup>151</sup>

- 12.6. Dr McLean did not directly address whether there was practice or otherwise in the department. I understood the effect of his evidence to be that if vertigo settles, whether or not it is from the prochlorperazine administration, this would be reassuring taking into account an assessment of history, examination (particularly neurological) and in some instances, imagery. This evidence is in line with that of Professor Anderson.
- 12.7. In my view, little turns on whether there was a policy at the Modbury Hospital ED in respect of the administration of prochlorperazine, particularly in light of Dr McLean's evidence outlined at 12.5 above, which captures the main thrust of Professor Anderson's evidence; that the risk of posterior circulation stroke should be assessed by taking into account the patient as a whole. For reasons detailed below, I am of the view that Dr Du did not adequately assess Mr Wotton's presentation as a whole and therefore discharged him prematurely. The effect of the prochlorperazine on Mr Wotton was only a small part of that picture.

### **13. Dr Du's discussion with an SMP**

- 13.1. Dr Du gave evidence that prior to discharging Mr Wotton she would have had a discussion with an SMP following the resolution of Mr Wotton's vertigo and symptoms to confirm her assessment and plans.<sup>152</sup>
- 13.2. There is no note in the clinical records or HASS printout of Dr Du's discussion with the SMP. There is no note in the clinical records or HASS print out from an SMP about a conversation with Dr Du. Dr McLean who was involved in aspects of Mr Wotton's treatment on 4 June 2018, had no memory of a conversation with Dr Du about him at any time during the shift.<sup>153</sup> Dr McLean's usual practice was to document the details

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<sup>147</sup> Exhibit C18, paragraph 19

<sup>148</sup> Exhibit C18, paragraph 20

<sup>149</sup> Exhibit C18, paragraph 20.1

<sup>150</sup> Exhibit C18, paragraph 20.2

<sup>151</sup> Exhibit C18, paragraph 20.3

<sup>152</sup> Exhibit C11, paragraph 12

<sup>153</sup> Exhibit C18. Paragraph 15

of any discussion on the HASS system.<sup>154</sup> He did not rule out the possibility of a discussion taking place stating that on occasion, notes in the electronic system are sometimes deleted.<sup>155</sup> There also remains the possibility that Dr Du spoke to the other SMP on duty that evening and no note was recorded by him.

- 13.3. Dr Du gave detailed evidence about her general practice of discussing patients with an SMP before discharging them.<sup>156</sup> She explained that it was part of her general practice with the exception of very straight forward patients.<sup>157</sup> She did not consider Mr Wotton a ‘*straightforward case*’.<sup>158</sup> Given what must have been the high frequency of this particular general practice for a junior medical officer, I am satisfied that that Dr Du did speak with an SMP prior to Mr Wotton leaving the ED. I am unable to make any findings about the content of that discussion.

#### 14. **Dr DU’s diagnosis**

- 14.1. Dr Du’s discharge letter recorded her diagnosis of Mr Wotton as ‘*CNS - NEUROLOGIC SYMPTOMS – VERTIGO*’.<sup>159</sup> Dr Du accepted that vertigo is a symptom of a medical condition and not a diagnosis.<sup>160</sup> Her evidence was that she should have entered vestibular neuritis (an inner ear disorder) as that is what she thought was the cause of Mr Wotton’s vertigo.<sup>161</sup> Dr Du also accepted that there was no reference to the differential diagnosis of stroke in the Discharge Letter, although the inclusion of the HINTS examination might have alluded to it.<sup>162</sup>
- 14.2. Dr Du’s counsel asked Professor Anderson to accept that while Dr Du ended up in the wrong place with her diagnosis of Mr Wotton, the process she followed was reasonable, considering her training and experience.<sup>163</sup>
- 14.3. Professor Anderson conditionally agreed with this proposition by highlighting two areas of concern:
- 1) There was no adequate explanation for Mr Wotton’s vision being abnormal prior to discharge;

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<sup>154</sup> Exhibit C18, paragraph 16

<sup>155</sup> Exhibit C18, paragraph 16

<sup>156</sup> Transcript, page 50

<sup>157</sup> Transcript, page 51; description of straight forward cases – Transcript, page 54

<sup>158</sup> Exhibit C11, paragraph 126

<sup>159</sup> Exhibit C7

<sup>160</sup> Exhibit C11, paragraph 72. Transcript, page 108

<sup>161</sup> Transcript, page 109

<sup>162</sup> Transcript, page 136

<sup>163</sup> Transcript, page 246

2) There was no explanation for Mr Wotton's severe hypertension (which was not managed) in the context of his severe cardiovascular disease.<sup>164</sup>

14.4. Professor Anderson was of the opinion that Dr Du failed to take Mr Wotton's presentation more seriously. He said this in the context of Mr Wotton's risk factors for stroke and his comments about '*not feeling right*'. When asked what he meant by this, Professor Anderson gave this evidence:

'Well he's a man with multiple cardiovascular risk factors; he's hypertensive, he's obese, he's a smoker. There are some other contextual factors there in terms of his lifestyle. And he has a history of cardiac disease. This is not a young, fit, well person. This is a person who has multiple cardiovascular risk factors who all of a sudden says to you I'm feeling dizzy, and I can't work and my eyes are blurry and it happened when I walked to the toilet, it's not right. That's something serious. That's the context that you need to work it.'<sup>165</sup>

14.5. It was submitted on behalf of Dr Du that at the time of her examination, there had been no report of '*not feeling right*'<sup>166</sup> and that Mr Wotton had only experienced this feeling at midnight when he woke and went to the toilet.<sup>167</sup> Dr Du did not remember whether Mr Wotton had reported '*not feeling right*' or not, but asked me to accept this submission on the basis that she would not have discharged Mr Wotton if his symptoms had not resolved, based on her usual practice.<sup>168</sup>

14.6. The complaint of '*not feeling right*' was recorded by paramedics.<sup>169</sup> RN Boardman gave evidence that her entry in the RDR chart was made from a handover given by the paramedics.<sup>170</sup> This included the reference to '*doesn't feel right*'.<sup>171</sup> I accept that RN Boardman likely recorded this information provided to her in the handover from the paramedics as opposed to Mr Wotton repeating it to her at 3:40am when she received Mr Wotton into her care. However, this reference appeared in two documents that Dr Du had regard to when assessing Mr Wotton, and would have been before her at that time.

14.7. I have difficulty accepting the submission that Dr Du would not have discharged Mr Wotton if his symptoms persisted. This is primarily due to Dr Du's own concession

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<sup>164</sup> Transcript, pages 246-247

<sup>165</sup> Transcript, page 211

<sup>166</sup> Closing Submissions on behalf of Dr Lily Du, paragraph 51, my own underlining.

<sup>167</sup> Ibid, Footnote 70; Transcript, page 325

<sup>168</sup> Closing Submissions on behalf of Dr Lily Du, paragraph 51

<sup>169</sup> Exhibit C4

<sup>170</sup> Transcript, page 18

<sup>171</sup> Exhibit C7, page 23

that Mr Wotton's visual disturbance had not resolved.<sup>172</sup> Adding to that is the fact that the HINTS examination was equivocal, with the most important aspect of that test showing a negative result, which was indicative of a central cause.<sup>173</sup> Perhaps most importantly, Dr Du had not excluded a stroke as a differential diagnosis.<sup>174</sup>

- 14.8. In any event, I understood Professor Anderson's criticism to relate to Dr Du's failure to consider Mr Wotton's entire presentation, including his co-morbidities and complaints of feeling '*not right*', whether the complaint was at midnight or when assessed by Dr Du a few hours later.
- 14.9. In terms of Mr Wotton's co-morbidities, it is clear that he suffered a number of underlying health conditions and lifestyle factors which increased his risk of a cardiovascular/cerebrovascular event. The SAAS document and RN Boardman's notes collectively detail hypertension, raised blood sugar levels, diabetes, obesity, congestive cardiac failure, ETOH use and smoking.<sup>175</sup>
- 14.10. I observed a hesitation on Dr Du's part to accept that Mr Wotton had significant co-morbidities. In her statement she described his co-morbidities as a '*few risk factors for stroke*'.<sup>176</sup> In her oral evidence, Dr Du was reluctant to concede that Mr Wotton was sedentary, despite him being overweight.<sup>177</sup> She also attempted to down play Mr Wotton's active hypertension in the ED stating that she was unaware of his baseline blood pressure.<sup>178</sup> While it is clear that Mr Wotton's blood pressure did reduce or normalise during his time in the ED, it was still high enough for Professor Anderson to classify it as '*not normal*'.<sup>179</sup> I accept Professor Anderson's evidence that Mr Wotton had multiple cardiovascular risk factors.
- 14.11. Ultimately, I accept Professor Anderson's evidence that Dr Du should have placed more significance on Mr Wotton's co-morbidities in the context of his comments of '*not feeling right*'. I find also that Dr Du discharged Mr Wotton prematurely, with an unexplained visual disturbance, an equivocal HINTS test result and without the differential diagnosis of posterior circulation stroke being excluded. I find that Dr Du

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<sup>172</sup> Exhibit C7, page 28 '*vision is slightly blurry but seems more a problem focusing using both eyes*'; Closing Submissions on behalf of Dr Du, paragraph 99 Transcript, pages 32-233

<sup>173</sup> Transcript, page 204

<sup>174</sup> Exhibit C11, paragraph 124; Transcript, pages 85-86, 111

<sup>175</sup> Exhibit C4 and Exhibit C7 page 23

<sup>176</sup> Exhibit C11, paragraph 151 (my own emphasis)

<sup>177</sup> Transcript, pages 77-78

<sup>178</sup> Transcript, page 118

<sup>179</sup> Transcript, page 227

should have admitted Mr Wotton for observation rather than discharging him from the Modbury Hospital ED.

14.12. I do not find that Dr Du should have undertaken imagery while Mr Wotton was in the ED. I say this for two reasons:

- 1) On balance, with the examinations that I have found Dr Du undertook in the ED on 4 June 2018, and her inability to obtain a clear understanding of Mr Wotton's visual disturbance, I am of the view that a period of observation was warranted over immediate imagery. I base this on the evidence of both Dr Du<sup>180</sup> and Professor Anderson.<sup>181</sup>
- 2) When Mr Wotton re-presented to the LMHS with classic signs of stroke, and underwent a plain CT, a CT angiogram, and a CT perfusion, it was only the CT angiogram that revealed the suspicion for '*an acute basilar thrombosis*'.<sup>182</sup> It is not clear to me that if imagery had been arranged earlier, it would have necessarily been a CT angiogram. There is also the possibility, given his evolving symptoms, that a CT angiogram may have shown nothing of concern at an earlier time, based on Professor Anderson's evidence about detection of the evolving stroke.<sup>183</sup> I am aware that there were no MRI facilities at the Modbury Hospital in June 2018,<sup>184</sup> but ultimately this had no bearing on Mr Wotton's case.

## **15. Was Mr Wotton's death preventable?**

15.1. For the reasons detailed below, I am unable to make a finding on the balance of probabilities that if Mr Wotton had been admitted for observation, his evolving symptoms would have led to a timelier intervention, thus preventing his death.

15.2. Mr Wotton returned to his Ridgeway home from the Modbury Hospital ED upon discharge. He went to sleep at approximately 9am and awoke at 11am with classic stroke symptoms.<sup>185</sup> Professor Anderson opined that if Mr Wotton had been admitted for observations, it is possible that his evolving stroke symptoms could have been detected at an earlier time.<sup>186</sup> However, Professor Anderson was highly complimentary

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<sup>180</sup> Transcript, page 146

<sup>181</sup> Transcript, pages 169-233

<sup>182</sup> Exhibit C8, page 27

<sup>183</sup> Transcript, page 171

<sup>184</sup> Transcript, page 145

<sup>185</sup> Exhibit C8, page 18 – 'left side facial droop and slurred speech'

<sup>186</sup> Transcript, pages 255-266

of the timely response to Mr Wotton's symptoms once the paramedics enacted the Code Stroke<sup>187</sup> and accepted that even if Mr Wotton's symptoms developed whilst in hospital, the thrombectomy performed by Dr Taylor could have occurred at exactly the same time.<sup>188</sup>

- 15.3. Mr Wotton's condition was then complicated by his poor response to what otherwise was described as a '*good result*'<sup>189</sup> from a complete opening of the artery<sup>190</sup> following the procedure undertaken by Dr Taylor. Upon his return to the ward at the RAH, Mr Wotton described a mild weakness in his right arm and difficulty swallowing and his left eye was observed to be deviating to the right.<sup>191</sup> Upon his return to the LMHS, Mr Wotton's condition continued to deteriorate. After initially being admitted to the ward, Mr Wotton's Glasgow coma score dropped suddenly with an airway compromise, and he was admitted to the Intensive Care Unit.<sup>192</sup> Re-occlusion of the vessel was suspected and ultimately confirmed on MRI.<sup>193</sup>
- 15.4. Mr Wotton was transferred back to the RAH, where he underwent a second thrombectomy with two stents being placed in the basilar artery.<sup>194</sup> As mentioned above, Mr Wotton's condition continued to deteriorate, and he was pronounced life extinct 10:50am on 9 June 2018.<sup>195</sup>
- 15.5. Professor Anderson stated that Mr Wotton had advanced atherosclerosis with a critical stenosis arising in a junctional area of the posterior cerebral circulation which precipitated the (unanticipated) early re-occlusion of the vessel, and ultimately led to his deterioration and death.<sup>196</sup> Professor Anderson stated that there was no evidence to indicate that earlier treatment would have prevented the re-occlusion, as this was part of the underlying atheromatous disease process.<sup>197</sup> The first thrombectomy may also have contributed to the vessel walls being traumatised (a recognised risk of the procedure), thereby adding to the risk of re-occlusion.<sup>198</sup>

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<sup>187</sup> Transcript, page 277

<sup>188</sup> Transcript, page 278

<sup>189</sup> Exhibit C9, page 52

<sup>190</sup> Transcript, page 268 - Prof Anderson gave evidence that Dr Taylor's entry of TIC1 3 - was a complete opening of the artery

<sup>191</sup> Exhibit C9, page 59

<sup>192</sup> Exhibit C8, pages 83-84

<sup>193</sup> Exhibit C8, page 22-23

<sup>194</sup> Exhibit C9, page 68

<sup>195</sup> Exhibit C9, page 88

<sup>196</sup> Exhibit C16b, page 6

<sup>197</sup> Exhibit C16b, page 6, Transcript, page 100

<sup>198</sup> Transcript, pages 196-197

## 16. Changes to NALHN since Mr Wotton's death

- 16.1. The Inquest heard that the diagnostic tools for acute stroke (such as the ROSIER Scale)<sup>199</sup> are designed with an anterior circulation stroke in mind,<sup>200</sup> with scores allocated for symptoms such as asymmetrical facial weakness and asymmetrical limb weakness.<sup>201</sup> Professor Anderson gave evidence that even though Mr Wotton's stroke was evolving during his presentation to the Modbury Hospital ED on 4 June 2018, had the Stroke Triage Protocol<sup>202</sup> (namely the ROSIER Scale) been applied, it would not have yielded a score sufficient to have triggered a Code Stroke.<sup>203</sup> This highlights the difficulty in diagnosing a posterior circulation stroke with the standard stroke protocols.
- 16.2. Received into evidence was the affidavit of Dr Helen Chotaliya, Co-Director of the Modbury Hospital ED.<sup>204</sup> Dr Chotaliya stated that an independent review was undertaken in relation to Mr Wotton's case, the outcome of which was presented at the Mortality Working Group Committee on 10 July 2018.<sup>205</sup> Following the review, the NALHN Clinical Review Panel distributed a patient circular (the circular)<sup>206</sup> to all staff in August 2018. As outlined by Dr Du, the circular was brought to her attention when she met with Dr Rossis to discuss Mr Wotton's case.<sup>207</sup>
- 16.3. The circular sets out a diagnostic pathway to follow for patients presenting with dizziness or vertigo in the context of a central or peripheral cause. The two arms of the pathway are dictated by either an episodic or continuous complaint of dizziness or vertigo. Dr Du gave evidence that Mr Wotton had complained of both episodic and continuous vertigo.<sup>208</sup> This is supported by the triage note of RN Dekker.<sup>209</sup> In submissions on behalf of Dr Du, this document was raised as requiring clarification as there was no clear pathway for a patient presenting with both. I am inclined to agree.
- 16.4. Based on the evidence of Professor Anderson about the difficulty of interpreting the results of the HINTS examination, I have reservations about this test being applied by

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<sup>199</sup> Recognition of Stroke in the Emergency Room.

<sup>200</sup> Exhibit C13 – Stroke Management Procedure and Protocols – A Guide for Stroke Units and Emergency Departments, October 2014

<sup>201</sup> Exhibit C13, page 9-10

<sup>202</sup> Exhibit C13, page 9

<sup>203</sup> Transcript, pages 234-237

<sup>204</sup> Exhibit C12

<sup>205</sup> Exhibit C12, paragraph 15

<sup>206</sup> Exhibit C12, Annexure HC1

<sup>207</sup> Transcript, pages 139-140

<sup>208</sup> Transcript, page 141

<sup>209</sup> Exhibit C7, page 20

ED staff without the guidance and advice of a neurologist. It is for the foregoing reasons that I make the recommendations below.

**17. Recommendations**

- 17.1. Pursuant to Section 25(2) of the Coroners Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest.
- 17.2. The Court therefore makes the following recommendations directed to the attention of the Chief Executive of SA Health, namely:
- 1) That consideration is given to regular training for Emergency Department staff in the symptoms of posterior circulation stroke.
  - 2) That consideration is given to developing a clear pathway for Emergency Department clinicians to follow when symptoms of vertigo or dizziness are both episodic and continuous.
  - 3) That consideration is given to engaging the on-call Stroke Unit when the HINTS examination is considered to be indicated in the Emergency Department.

*Key Words: Hospital Treatment; Emergency Department; Stroke Protocols*

*In witness whereof the said Coroner has hereunto set and subscribed her hand and*

*Seal the 13<sup>th</sup> day of July, 2022.*

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*Coroner*